Tainter Lake Nutrient and Sediment Reduction Project
Final Report

August 19th, 2011

By Amanda Hanson and Dan Prestebak
Dunn County Land Conservation Division

Implemented by:
Amanda Hanson, Lance Klessig, Greg Leonard, Dan Prestebak
Dunn County Land Conservation Division

In Cooperation with:
Melanie Baumgart, Brian Brezinski, Kirsten Cahow-Scholtes
River Country RC&D (Resource Conservation and Development Council, Inc.)

The Dunn County Land Conservation Division was awarded a grant from the Wisconsin Department of Natural Resources for the Tainter Lake Nutrient and Sediment Reduction Project. The grant period was January 1, 2010, through July 30, 2011.

The intent of this grant was to continue working with farmers in Grant Township of Dunn County to provide them with the education and tools to implement best management practices to reduce nutrients and sediment leaving their land. The costs of shipping and testing soil samples, rental cost of a no-till drill, custom planting cost of no-till corn planting, and profit analysis were tools offered to participants to assist them in achieving the goals of the project.

Soil testing provides a scientific determination of the crop nutrient needs specific to the soil being tested. Soils maps, instructions, soil information sheets, sample bags and a soil probe were provided to interested participants who signed a simple contract agreeing to discuss the results with staff. Producers returned soil samples, soil information sheets and the soil probe to the Dunn County Land Conservation Office. The samples and information sheets were then forwarded to Wisconsin DATCP state approved laboratories for analysis. The cost of shipping and analyzing the soil samples were paid for through this project. Once the test results were received by staff, they provided the results to the participants and discussed the results as well as fertility management.

Soil sampling turned out to be a very valuable tool because it became a great way to meet and get to know landowners and to get them involved in the project. In some cases it has led to the most desired outcome of adoption of a full nutrient management plan. In other cases it has not, but in all cases it has created a positive relationship between the landowner and the conservation planning staff.

No-till planting of crops disturbs less soil than minimum or conventional tillage resulting in a significant reduction of soil, water, and nutrients leaving the field. Farmers were given the opportunity to try no-till planting.

A custom operator was contracted to plant no-till corn with the cost of the planting ($14.00/acre in 2010, $16.00/acre in 2011) covered by the grant. The farmer was responsible for contacting the custom operator prior to planting to discuss the location of the fields to be planted and to top off the diesel fuel tank of the custom operator's tractor before leaving the farm. The farmer provided the seed corn and starter fertilizer (if they chose to use starter fertilizer).

A no-till drill owned by Seeds & Stuff Farm Market, Inc., was contracted and made available to farmers who were interested in planting no-till soybeans or alfalfa. The farmer signed an agreement and notified Seeds & Stuff Farm Market, Inc., of their interest to be placed on the waiting list for planting. The company called the farmer when the drill was available for use. The farmer had to pick up and return the drill, supply the seed, fertilizer, tractor, and labor to plant the field. The grant paid Seeds & Stuff Farm Market, Inc., the contracted fee of $14.00/acre in 2010 and 2011 after staff verified that the required amount of residue remained after planting.

In 2010, there were 45 landowners with 2,732 cropland acres who received benefits from this grant. Breaking down the totals, 9 producers planted 183 acres of no-till corn, 2 producers planted 279 acres of no-till soybeans and alfalfa, and 34 landowners soil tested 2,270 acres.

Profit analysis calculations were completed with participating farmers after harvest of the crops in 2010. Cost of seed, fertilizer and herbicide are a few examples of the factors used to calculate profit analysis. The average yield of no-till corn was 143 bushels per acre, resulting in an average net profit per acre of $331.79. Average yield of no-till soybeans was 54 bushels per acre, resulting in an average net profit per acre of $398.64.

In 2011, there were 17 farmers with 1,906 cropland acres who received benefits from this grant. Breaking down the totals, 10 farmers planted 460 acres of no-till corn, 1 farmer planted 28 acres of no-till soybeans, and 6 farmers soil tested 1,418 acres by taking 308 soil samples.

During 2010, assistance was offered specifically to those farmers operating land in Grant Township of Dunn County. In 2011, farmers operating land in Dunn County within three miles of the border of Grant Township, which includes parts of Colfax, Otter Creek and Sand Creek Townships, were eligible. First year participants were given priority in both 2010 and 2011.

Manure application to land may be a source of nutrients leaving the field. To keep this risk at a minimum, a manure spreader calibration can be preformed. By using portable scales, the volume of manure in a manure spreader can be calculated. This information can be utilized to apply the manure to a field to more precisely meet the nutrient need of

the desired crop. Manure spreader calibrations were offered to those farms generating manure.

Nutrient Management classes were provided by the Dunn County Land Conservation Division and Chippewa Valley Technical College with additional assistance from River Country RC&D and UW-Extension. Farmers were able to choose between creating an electronic plan by utilizing SNAP-Plus which calculates crop nutrient needs, soil loss, and the Wisconsin Phosphorus Index (PI) or a handwritten plan utilizing 590 EZ forms.

Ten farmers (who operate 2,427 acres of cropland) wrote their own plans by participating in these classes. Five farmers chose to write electronic SNAP-Plus plans for 1,049 cropland acres, and five farmers chose to handwrite 590 EZ plans on 1,378 cropland acres. More than 170 soil samples were tested for the 10 farmers. The soil testing and classes were offered at no monetary cost to the farmers with the only investment being their time. Farmers who participated obtained a greater understanding of how their choices directly impact their crop yields, soil fertility, soil loss, and, ultimately, water quality.

The Dunn County Land Conservation Division is currently in the process of calculating the Phosphorus Index for producers who chose the 590 EZ method of developing their Nutrient Management Plan. The Phosphorus Index is a measurement that estimates the amount of phosphorus leaving a field. Soil test results, field slope and length, soil type, nutrient applications, and crop rotation information are all combined in a calculation of the PI value, which is performed by the SNAP-Plus computer program.

Staff met with the Steering Committee throughout the course of the project. During these meetings, staff were given the opportunity to update the Committee on progress and listen to the ideas and suggestions of the Committee. Members of the Steering Committee included representatives from Dunn County LCD, River Country RC&D, Tainter/Menomin Lake Improvement Association, UW-Extension, West Wisconsin Energy, and the Wisconsin Department of Natural Resources.

Education and outreach were also important components of the grant. Both years, meetings were held in the communities where the farmers reside, seeking farmers interested in no-till planting and soil testing before the crops were planted.

In July of 2010, a No-Till Field Day was held in Grant Township. It was hosted by a farmer who had recently tried no-till. This event allowed people to walk in the fields, ask questions, and hear the story directly from the farmer. Due to the positive results with his no-till experience, the host farmer chose to purchase the needed parts to convert his conventional corn planter to a no-till corn planter.

Local newspapers published articles on the progress of this grant. The No-Till Field Day was showcased by a writer at the “Colfax Messenger”. The semi-annual report from Dunn County Land Conservation Division and River Country RC&D, as well as reports for the Red Cedar Phosphorous Reduction Program from River Country RC&D, contain

detailed achievements of the project. A featured article in the August, 2010, edition of the "Wisconsin Natural Resources" magazine entitled "Less P is Key" focused on the implementation of this project.

Several presentations on this successful project have been provided to the Dunn County Land Conservation Committee and at events hosted by Sustainable Dunn, the Tainter/Menomin Lake Improvement Association, and also at the St. Croix Basin Protection Conference at UW-River Falls in April of 2011.

The accomplishments of this project were a result of the teamwork between the partners involved in each step along the way. These partners included: Dunn County Land Conservation Division, River Country RC&D, U.W. Extension, Dairyland Laboratories Inc., U.W. Soil Testing Lab, L & M Mail Service, Crossroads Ag, Agri-Tech Services, Seeds & Stuff Farm Market, Inc., Xcel Energy, Town of Grant, Town of Otter Creek, Town of Sand Creek, Town of Colfax, USDA-Natural Resources Conservation Service, Wisconsin Department of Natural Resources, Tainter/Menomin Lake Improvement Association Inc., Western Wisconsin Energy LLC, Chippewa Valley Technical College, Tom Polen, Bruce Winget, Nelson Farms Inc., the Steering Committee and all of the farmers who volunteered to be a part of this project.

The Tainter Lake Nutrient and Sediment Reduction Project grant has opened up the possibilities to farmers in the area near the Town of Grant, in Dunn County, to reduce nutrients and soil leaving their fields. Through this voluntary project, farmers have chosen to learn more about their farming activities while benefiting from profitable returns through the use of no-till planting of crops, soil testing, and fertility management. These tools were furnished with little to no out-of-pocket expense to the farmers. Participants were provided opportunities to attend events, meet other farmers in their geographical area, and network to further enhance their own agricultural operations.

The public became aware of this success story through meetings, events, and publications. There has been a "bridging" of the gap between urban and rural opinions and general knowledge of sediment and nutrient issues within the watershed. Many farmers have chosen to purchase no-till equipment, modify their conventional equipment to no-till, or have a custom operator plant crops utilizing no-till methods. A majority of these farmers have willingly declined program funding with the intent to pass it on to those farmers who have not had the opportunity to try no-till planting. By reducing nutrients and sediments flowing downstream, the farmers have achieved ultimate success by improving their bottom line, enhancing their farm land, and creating a positive impact on their watershed.

Photos from the Tainter Lake Nutrient & Sediment Reduction Project
All photos of the Project were taken by staff

No-Till Field Day - July, 2010

Lance Klessig and participants evaluate a stand of no-till soybeans during the Field Day

Photos from the Tainter Lake Nutrient & Sediment Reduction Project
All photos of the Project were taken by staff

Greg Leonard speaking to farmers at a meeting before crop season begins

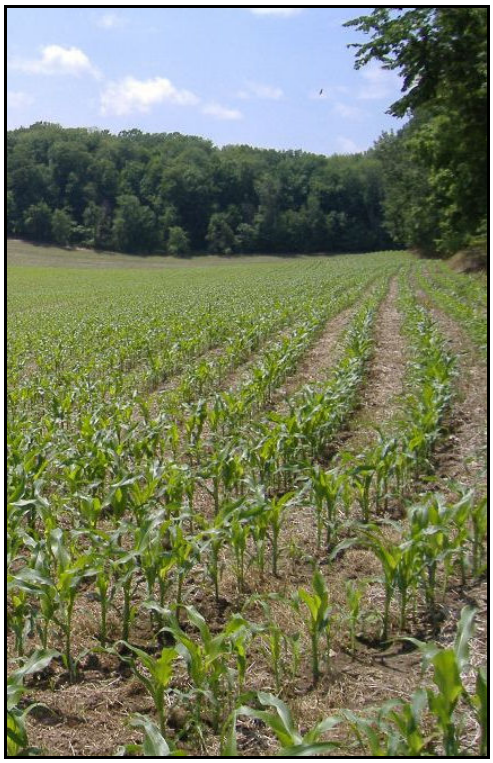
Planting no-till corn

Photos from the Tainter Lake Nutrient & Sediment Reduction Project
All photos of the Project were taken by staff

Planting no-till corn on corn residue

Planting no-till corn on chopped corn residue

Photos from the Tainter Lake Nutrient & Sediment Reduction Project
All photos of the Project were taken by staff



No-till corn field

No-till corn planted on corn residue

Photos from the Tainter Lake Nutrient & Sediment Reduction Project
All photos of the Project were taken by staff

No-till corn planted on alfalfa hay residue

A Grant Township landowner uses the no-till drill to plant soybeans

Photos from the Tainter Lake Nutrient & Sediment Reduction Project
All photos of the Project were taken by staff

No-till soybeans drilled on corn residue

No-till alfalfa with an oats cover crop

Photos from the Tainter Lake Nutrient & Sediment Reduction Project
All photos of the Project were taken by staff

Red Cedar River at Highway 64 Wayside & Picnic Area

Bridge on County Road D and County Road G at Tainter Lake/Red Cedar River from Lambs Creek Park

Photos from the Tainter Lake Nutrient & Sediment Reduction Project
All photos of the Project were taken by staff

Red Cedar River at Lambs Creek Park